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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,005	10/24/2003	John W. Forsberg	1023-294US01	9349

28863 7590 04/01/2009

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ART UNIT	**PAPER NUMBER**
3762	

NOTIFICATION DATE	DELIVERY MODE
04/01/2009	ELECTRONIC

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/693,005
Filing Date: October 24, 2003
Appellant(s): FORSBERG ET AL.

Jessica H. Kwak
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8 December 2008 appealing from the Office action mailed 1 October 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,516,227	MEADOWS ET AL	2-2003
2003/0229383	WHITEHURST ET AL	12-2003
6,249,703	STATNTON ET AL	6-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-10, 11, 12, 14, 15, 17-21 and 32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows et al. (US 6.516,227) in view of Whitehurst et al. (US 2003/0229383, hereinafter Whitehurst'383).

Regarding claims 1, 5, 19, 21 and 32, Meadows et al. discloses a medical device programmer for an implantable neurostimulator (TITLE; ABSTRACT; column 5, lines 25-35) comprising an IrDA infrared interface (Fig. 7D-2, IrDA module 640) to receive changes to software executed by a processor within the programmer (Fig. 7D, microprocessor 620) during an infrared communication session (column 39, lines 14-42); and a controller (UART circuit 644 and microprocessor 620) to activate the infrared communication session in response to power-up of the programmer (column 27, lines 38-54; column 31, lines 37-49; column 32, lines 35-36 and 50-62; column 36, lines 24-60; column 38, lines 18-21; column 38, line 33 through column 40, line 25).

Meadows et al. does not expressly disclose that the seeking period is finite and that the infrared interface is deactivated after a finite period of time if the communication session is not established. In the same field of endeavor, Whitehurst'383 teaches a

sleep-listen cycle of seeking a communication session (Figs. 3A-C and related paragraphs) with an external programmer to allow the device to be placed in a low-power mode to minimize power consumption (paragraph [47]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system as taught by Meadows et al. with the finite period seeking session as taught by Whitehurst'383 to provide the Meadows et al. system with the same advantage of minimizing power consumption.

Additionally regarding the clause that the infrared communication session is initiated for a finite amount of time, Meadows et al. discloses that a telecommunication link is established each time the patient or medical personnel change a stimulus parameter or initiate a charging session (column 17, lines 61-65), which means that each communication must necessarily terminate at some time before the next begins. Likewise, Meadows et al. discloses that the patient handheld programmer (HHP) is automatically turned off after a period of disuse, e.g. 1 minute (column 36, lines 50-53). Even if the unit were in constant IR communication with the external linking device, this automatic turning off of the HHP unit would also constitute the terminus of a finite infrared session. Therefore, this claim limitation does not distinguish the instant application over the prior art.

Additionally regarding the clause that the infrared communication session is initiated in response to power-up of the programmer, Meadows et al. discloses the following: that the clinician programmer is in telecommunication contact with the HHP in a likewise fashion that the HHP is in communication with the implantable pulse

generator (IPG) (column 17, lines 3-6); that the HHP communicates with the IPG in order to control the operating program and stimulation parameters, taken to be a "medical device program" (column 16, line 60 through column 17, line 13); that the IPG telemeters data to the HHP each time a communication link is established (column 17, lines 55-60) and on power-up (Fig. 4D; column 37, lines 7-11)); and further, that all programming systems used by the HHP and clinician's programmer are always appropriately synchronized so that any changes from one are reflected in the other (column 36, lines 24-28). Thus it is understood that the clinician programmer controls the operating program and stimulation parameters (i.e. "the medical device program") of the HHP in a likewise fashion that the HPP controls the operating functions of the IPG. From this disclosure, one skilled in the art would further recognize that it is an inherent function of the Meadows et al. device that the infrared communication session is initiated on power-up of the HHP in order for the HPP and clinician programmer to be "always appropriately synchronized." Therefore, because communication initiation in response to power-up is understood to be an inherent property of the Meadows et al. apparatus, the instant application is not distinguished over the prior art in this regard. Alternatively, it would be obvious to start the IR seek session on power-up of the device since it is well-known in the art to provide power-up telemetry sessions in devices that have programmers to verify and/or update protocol and operational data within the system.

Regarding claims 3 and 4, Meadows et al. discloses that the software changes comprise changes to an operating system or changes to medical device programs (column 16, line 60 through column 17, line 13; column 36, lines 24-28).

Regarding claims 6 and 8, the device of Meadows et al. is shown in Fig. 5 to be constructed of a housing with more than one part (Fig. 5, column 36, line 46 discloses an upper housing). Any electronic device comprising housing of more than one part and containing software loaded on a memory inherently comprises a software loading port, where the port is considered to be the open portion of the housing in which the software-loaded circuitry is being inserted or affixed, and the other portion of the housing is considered to be the plate member covering the loading port.

Regarding claim 9, Meadows et al. discloses that the plate member be printed with identifying information (column 38, line 55 through column 39. line 15). Given the configuration shown on the right side of the figure above, the disclosed labels on the buttons clearly satisfy this claim limitation.

Regarding claim 7, a JTAG interface is a well-known and inherent component of any electronic system using SRAM or EEPROM (Fig. 7D-2). Therefore, this claim limitation does not structurally distinguish the instant application over the prior art of Meadows et al.

Regarding claim 10, it is an inherent property of any functional electronic device using an operating system to contain software that includes instructions to implement that operating system. Therefore, this claim limitation does not distinguish over the prior art.

Regarding claim 17, Meadows et al. discloses an LCD display (Fig. 7D-1, LCD module 240; column 39, lines 15-42).

Regarding claims 2 and 20, the active time requirements of 5 to 10 seconds and less than or approximately equal to 10 seconds, respectively, are not limiting over the Meadows et al. device because Meadows et al. does not explicitly teach a system that shuts off its IR interface with a different time requirement. If the Meadows et al. system remains in use for an hour or is always on, then the IR interface is active for 5-10 seconds by nature of being on for longer than that. Likewise, if the patient or clinician using the device powers down after 8 seconds, then the IR interface has been active for 8 seconds, which satisfies the language of claims 2 and 20. Therefore, claims 2 and 20 do not patentably distinguish the instant application from the prior art. Alternatively, Whitehurst'383 teaches a seeking time-out period of 10 seconds (paragraph [40]).

Regarding claims 11, 12, and 14, Meadows et al. discloses the invention substantially as claimed including a first and second circuit board (Fig. 7A, button pad 241 is disclosed as being on a separate printed circuit board; column 36, lines 44-49), but does not disclose expressly that the telemetry circuitry and antenna be on the first board and the display, display circuitry and control circuitry be on the second board. It would have been an obvious matter of design choice to one of ordinary skill in the art at the time of the invention to modify the system as taught by Meadows et al. with the two circuit boards as an obvious expedient to simplifying the manufacturing process and for the purpose of making the device of a size similar to other hand held devices that use a hinged two board design, such as cellular phones.

Therefore, it would have been obvious to modify the system/method of Meadows et al. to obtain the invention as specified in the claims, and the instant application does not patentably distinguish over the prior art.

Regarding claim 15, Meadows et al. discloses the invention substantially as claimed including that the device is small enough to hold comfortably in one hand powered by e.g. a single AA-sized battery in an internal battery compartment (column 38, line 55 through column 39, line 22), but does not expressly disclose that the battery bay extends at least partially into the internal antenna aperture. It would have been an obvious matter of design choice to one of ordinary skill in the art at the time of the invention to modify the system as taught by Meadows et al. by extending the battery bay into the antenna aperture, because Applicant has not disclosed that such a positioning provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with a battery compartment away from the antenna source or even an external power source since it appears to be an arbitrary design consideration that fails to patentably distinguish the instant application over Meadows et al.

Furthermore, having a battery bay that extends into an aperture defined by the antenna is almost inherent in the nature of a device small enough to be held in the hand (the figure provided above with a battery in place of the memory module provides a good example of this). Still further, the aperture as claimed could be defined as the housing of HHP 202, of which the battery bay is an inherently integral and internal part.

Therefore, it would have been an obvious matter of design choice to modify the system/method of Meadows et al. to obtain the invention as specified in claim 15, which fails to distinguish the instant application over the prior art.

Regarding claim 18, Meadows et al. discloses the invention substantially as claimed but does not disclose expressly that the infrared interface is positioned on a lower side surface of the housing. It would have been an obvious matter of design choice to one of ordinary skill in the art at the time of the invention to modify the system as taught by Meadows et al. by positioning the infrared interface on a lower side surface of the housing, because Applicant has not disclosed that such a positioning provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with an alternate placement of the IR interface since it appears to be an arbitrary design consideration that fails to patentably distinguish the instant application over Meadows et al. Therefore, it would have been an obvious matter of design choice to modify the system/method of Meadows et al. to obtain the invention as specified in the claim.

2. Claim 16 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows et al. in view of Whitehurst'383 as applied to claim 1 above, and further in view of Stanton et al. (US Patent 6,249,703).

Meadows et al. discloses the Applicant's invention substantially as claimed except for an external antenna. Stanton et al. teaches the use of an external antenna (Fig. 1, external antenna 28) with a patient programmer (10) to eliminate the need to

place the programmer over the implant site during programming sessions, which is helpful for patients who cannot easily reach the implant site due either to physical condition or location of the implant site (column 6, lines 6-17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system as taught by Meadows et al. with an external antenna for the same advantages taught by the Stanton et al. patent (motivation to combine provided by Stanton et al., column 6, lines 6-17).

(10) Response to Argument

It is initially noted, as supported by the Applicant's statement, that the claims have not been amended since 3 August 2007, and therein were not substantially changed from the claims presented 6 September 2006. The Arguments contained in the Appeal Brief filed 8 December 2008 are considered to be substantially identical in scope and position to those accompanying those claims of 6 September 2006, such that each Argument maintained and presented in the Appeal Brief being addressed herein are seen as having been previously addressed by the Examiner no fewer than five times in the Final Office Action issued 3 May 2007, the Advisory Action from 23 August 2007, the Final Rejection of 21 March 2008, the Interview Summary of 23 June 2008, and the Advisory Action of 1 October 2008. In each of these instances, the Applicant has issued substantially identical Arguments without presenting new arguments, changing the stance of their previous arguments, or submitting substantial amendments

to the claims. Therefore, each argument being addressed herein is considered to have been addressed substantially and on numerous occasions previously by the Examiner.

Independent claim 1 –

Regarding claim 1, Applicant argues that the IR interface seeks a communication session for a limited period of time (i.e. a finite seeking period) and deactivates if a session is not established within a limited period of time rather than indefinitely seeking the entire time the programmer is on. Applicant first argues that Whitehurst fails to teach the finite seeking period in response to power-up and deactivation of the IR interface if a session is not established. Applicant then argues that one would not look to combine the teachings of an external device programmer and an internal medical device. Applicant also argues that one would not me motivated to convey the teachings of either RF or IR telemetry each to the other to provide an improvement.

Applicant first argues that one would not look to modify an external device (e.g. a medical programmer) with teachings form a reference to an implanted medical device such as the one taught in Whitehurst. First, it is noted that RF and IR are both well-known and interchangeable communications means used in the medical art. It involves only routine skill in the art to choose an IR transmitter/receiver versus an RF transmitter/receiver to suit one's intended purpose. Secondly, it would be natural for one to look at the teachings of an internal device when considering improvements to an external programming device since the two are always used in concert, such that especially an improvement to the telemetry means of one would provide a corollary

improvement to the communications means of the other. Further, it is considered that Meadows is capable of implantation and Whitehurst is capable of explantation without destroying functionality in either, such that the mere concept of implantable versus external should not serve as a barrier for one skilled in the art to seek teachings from one to consider improvements in the other, particularly in the instant case where both teachings are in the same problem solving area of improving a telemetry/communications system that necessarily involves components of and coordination between both devices.

Regarding Applicant's arguments directed towards the finite seeking period of the instant claim 1, it is noted that while the claims are considered in light of the specification, the specification is not read into the claims. Claim 1 does not positively and specifically recite a finite seeking period and most definitely does not recite a listening period, but simply requires that the controller "seek...for a finite period of time." Therefore, even in the instance when e.g. a communication session is established in Meadows, the seeking would necessarily end and be finite. The Examiner also maintains the position taken on the periods of time between communication sessions, given this broader reading of "seeking for a finite period of time" rather than clearly establishing a listening window.

Similarly, the language "in response to power-up" does not limit the activation to being immediately following or irreversibly and unavoidably resulting from the power-up of the programmer, but merely implies that the seeking happens after the power-up occurs. Therefore the original position taken by the Examiner is considered valid and is

maintained. Additionally, the Applicant cites on page 11 an embodiment of Meadows where the infrared interface is activated when a cable is connected between devices. This again does not preclude from reading on the language as currently written, since such a connection happens after the power-up. It is also maintained that the seeking and session itself must necessarily occur after or in response to power-up since e.g. plugging in the IR cable when the device is off will not do anything, and will only establish communication when it is connected after, i.e. in response to, power-up.

Further regarding Applicant's claim that an IR interface is incapable of communication when implanted within a patient, it is noted that there are numerous examples of devices that us IR communication when the implant is situated shallowly directly under the skin, such that the IR signal can be transmitted through the skin, e.g. in pulse oximetry implants. Also contrary to the Applicant's assertion that combination of the references would result in some non-functional IR/RF hybrid device with one modality on one side and another modality on the other, it is noted that the combination is not made as a bodily incorporation of the two devices, but what the teachings of the one suggests to one of ordinary skill in the art in relation to the other. In this instance, the Whitehurst reference is combined with Meadows for the amply reiterated purpose of improving the efficiency and power conservation of the telemetry protocol.

Applicant's arguments directed to the seeking period and its relation to power-up are a clear misinterpretation of the claim language presented. Each of Applicant's arguments rely on the idea that the activation to seek must occur instantly after the power-up. This simply is not true, as the claim merely recites that activation occurs "in

response to power-up," which is in no way tied temporally to the power-up process. In its broadest reasonable interpretation, the seeking must merely occur sometime after power-up and not be able to occur before power-up, as previously explained. There is neither explicit recitation nor even the implication that seeking must occur instantaneously after power-up.

In paragraph 1 of page 11, Applicant refers to an alternate position that it is well known to provide power-up telemetry sessions to verify and/or update protocol and operational data. Although such is indeed well known in the art, since the prior position taken by the Examiner has been shown to be accurate and true, this additional position is no longer seen as necessary to validate the rejection, even though it is itself factually sound.

Applicant also argues that Meadows fails to disclose a controller to activate the infrared interface to seek an infrared communication session in response to power-up of the programmer. Since Meadows discloses multiple subsequent communication sessions, it is indeed inherent that not only is the duration of each session finite, but the duration of time between communications (i.e. the seeking period) is finite. Meadows also clearly sets for that the external programmer interrogates (i.e. requests a communication session with) the implanted device to establish hardware recognition before beginning transmission of data and operational programs (column 27, lines 38-55). Meadows further discloses that hardware recognition (i.e. the initiation of an infrared interrogation session) is initiated as soon as the programmer is connected to the system, i.e. powered on (column 32, lines 35-36 and 50-62). What this tells us is

that, at the request of the external programmer, the implanted device must inherently seek a communication session in order to establish an uplink for telemetering data to and from the external programmer. If there is no active seeking phase from the implanted device, no communication can ever be established between the two components. Again in column 38, lines 30-35, Meadows discloses that "once the hidden physician screen has been activated [i.e. powered on] a telemetered interrogation of the IPG is initiated."

Claim 2 –

Applicant's position regarding claim 2 again relies on the inaccurate assumption that there is a temporal connection between seeking and power-up, which again simply is not present in the claim language as written, and is considered moot. Additionally, as pointed out by both the Examiner and the Applicant, paragraph [40] of Whitehurst explicitly discloses the time-out period of 10 seconds, which reads on a time period of 5 to 10 seconds.

Additionally, it is noted that the language of the claim is unclear in that it does not sufficiently establish whether the limitation of "5 to 10 seconds following" is intended to convey that the seeking begins immediately following power-up and continues for 5 to 10 seconds, or if the seeking begins 5 to 10 seconds after power-up and continues for an unspecified amount of time. Regardless, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a range of 5-10 seconds in either scenario, since it has been held that where the general conditions of a claim are

disclosed in the prior art, discovering the optimum or workable ranges (In re Aller, 105 USPQ 233) or optimum value of a result effective variable (In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)) involves only routine skill in the art.

Claims 6-9 –

Applicant argues that the applied art fails to disclose a software loading port and a housing defining an aperture that provides access to the software loading port. The examiner recognizes and did recognize in the previous actions that the software port (where a port can broadly be defined as a hole or opening or aperture) and the housing defining an aperture (wherein the housing is shaped such that the aperture is an opening providing access to the software, presumably on a memory module). Additionally, per Applicant's proposed definition of a port being an interface, the prior art clearly discloses the software on memory that is interfaced with the circuit, such that the connecting means that attaches the memory to the rest of the functional circuit serves to read on the "port," and is clearly different than the housing, which still nonetheless provides the claimed aperture.

The Examiner cited numerous references to suggest the obviousness of this limitation, particularly in light of the special definition that the Applicant has insisted upon in paragraph 2 of page 18. 2003/0177031 to Malek; 2004/0125029 to Maoz; 6,614,664 to Lee; 6,418,034 to Weber; and 6,073,033 to Campo, each of which is on the evidentiary record, has clear examples of software loaded into a housing through a port. Also, per the given definition that a software port in a housing aperture is intended

to convey a memory connection means that is accessible through an opening in the housing, there are an incredible number of examples in the popular culture that are known to those skilled in the art. A non-exhaustive list of examples would be memory cards (e.g. Compact Flash, SD or microSD) loaded through a bay or opening into mp3 players, digital cameras, digital photo frames or cell phones; SIM cards in GSM cell phones; CD-Rom, floppy disk or card reader drives on desktop and laptop computers; or even an old top-loading Nintendo or Atari system. It is apparent through these examples and the many more that exist that such an accessible software port is a common and well-known element in the art, such that it provides a clear manufacturing expedient and the end-user benefit of easily swapping memory or software media. Each of these examples also provides clear disclosure of the plate member of the Applicant's claims as well. Two readily available examples would be the Samsung SCH-u740, the cell phone the Examiner had in his pocket when writing the Final Rejection of March 2008, and the Palm Centro, which the Examiner has in his pocket currently. Each has a clearly recognizable software or memory loading port accessible through a labeled plate in the housing.

Claims 11, 12, 14 and 17 –

Applicant argues that unsupported conjecture about design choice is not a proper basis for rejection. No unsupported conjecture was made in the Office Action. A two circuit board design is an obvious expedient to the design process. One needs look no further than the cell phones now carried by the majority of Americans to see this. The

folding design leaves a footprint half the size of the unfolded or one circuit board design and facilitates future repairs. It is also not new or novel, but rather an inherent physical property of insulative substrates between two circuitry components, e.g. air over a distance or placement on opposite sides of a non-conductive substrate such as a silicon-based circuit board, to reduce electromagnetic interference or noise between components. Less noise will arise between two components the further apart they are placed, albeit across an air gap or on two separate circuits. The Lee reference (US 6,614,664) was placed on the evidentiary record submitted with the original Office Action for the very reason of providing support for this established rejection.

Applicant argues that it would not be an obvious design choice to include two circuit boards, one with telemetry circuitry and the other with display circuitry. The Examiner again references the Samsung SCH-u740 cell phone, which, like any folding or "clamshell" style cell phone clearly reads on the claim limitation. The antenna and telemetry circuitry is contained in the half of the phone held in the hand, while the display is contained on the portion that flips open. This is true of every similarly styled cell phone that the Examiner can think of. The same is also true of laptop computers, where the display is housed in a portion that flips open and the antenna is contained in the part containing the motherboard, keyboard, etc. There are numerous benefits to such an arrangement that were not first discovered by the Applicant, such as swapability or replacement/repair of parts, heat distribution of components, reducing signal interference between components.

Claim 15 –

Regarding claim 15, evidentiary record of a programmer comprising a battery bay extending at least partially into the antenna aperture can be found in Figure 25 of the Causey reference as well as in Figures 1A and 2B of Malek (US 2003/0177031), among others. It is again noted that one can look no further than a modern cell phone to realize that such a battery bay comprises obvious design choice. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The Examiner again references the Samsung SCH-u740, which along with almost any style cell phone clearly reads on the claim limitation. Removal of the battery cover of such a cell phone clearly reveals that the antenna extends into the battery bay. Thus the limitation is clearly a matter of design choice to allow for a more compact profile. Otherwise, the extension of the antenna into the battery bay is not seen as providing any benefit either to battery function or antenna function, let alone any unexpected result or unforeseen improvement in the art.

Claim 16 –

Applicant's arguments with reference to claim 16 are considered moot based on the findings related to claim 11 above.

It is noted that with claims 11, 12 and 14-17, Applicant is essential attempting to claim the cosmetic structure of a cell phone without providing that such a structure provides an unforeseen benefit to the function or improvement of the medical art. As such, it is seen as a matter of arbitrary cosmetic design choice that is already more than well known in commercial use.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Christopher A Flory/

Examiner, Art Unit 3762

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/George Manuel/
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